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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,775	04/06/2007	Anthony Peter Hulbert	038819.57537US	5722

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EXAMINER

LEBASSI, AMANUEL

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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03/16/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,775	Applicant(s) HULBERT ET AL.	
	Examiner AMANUEL LEBASSI	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04/06/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05/18/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 rejected under 35 U.S.C. 103(a) as being unpatentable over Noerpel et al. US 6249677 in view of Lamkin et al. US 6298048.

Regarding claim 1, Noerpel teaches a method of communication in a time division duplex (TDD) satellite communication system comprising at least one satellite and a plurality of terrestrial terminals (abstract and Fig. 1 and 2 – satellite and multiple terminals). Noerpel teaches allocating time division multiple access (TDMA) time slots for transmission between the satellite and any one of the plurality of terminals (Fig. 3 and Fig. 6, where plurality of terminals use TDMA), such that for any given terminal, transmit time slots for transmission to the satellite and receive time slots for reception from the satellite are separated in time (col. 7, line 65 – col. 8, line 13). Noerpel teaches wherein propagation delay is not an exact number of multiples of frame length (col. 8, line 56 – col. 9, line 5 - propagation delay is different). Noerpel teaches wherein an assigned time delay between transmit and receive time slots at the any one terminal is small compared with round trip propagation delay (col. 8, 64- col. 9, line 5, where time delay is small). Noerpel fails to teach when the transmit time slot for one

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terminal causes a transmission from that one terminal to be received at another terminal overlapped in time with a receive time slot allocated for the other terminal, then those two terminals are spaced apart in distance, such that an interference path between the two terminals is negligible. However, Lamkin teaches when the transmit time slot for one terminal causes a transmission from that one terminal to be received at another terminal overlapped in time with a receive time slot allocated for the other terminal, then those two terminals are spaced apart in distance, such that an interference path between the two terminals is negligible (col. 5, lines 22-55 where the terminals are spaced apart with almost no interference).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the invention of Noerpel and have it include that of Lamkin.

The motivation would have been in order to maintain the timing (col. 1, lines 21-24).

Regarding claim 2, Noerpel teaches signals between the terminals and the satellite are synchronized at the satellite (col. 7, lines 55-64).

Regarding claim 3, Noerpel teaches alternate time slots at the satellite are used for transmission and reception (col. 7, lines 65- col. 8, line 4).

Regarding claim 4, Lamkin teaches wherein the terminals use navigational information to estimate their propagation delay to the satellite; and thus to determine the time required to transmit into an allocated time slot (col. 5, lines 42-55).

Regarding claim 5, Noerpel teaches wherein the satellite transmits ephemeris data to the terminals to aid in determining the propagation delay (col. 8, lines 56-62).

Regarding claim 6, Noerpel teaches wherein the position of each terminal is determined by the satellite, using location data provided by each terminal delay (col. 8, lines 56-62).

Regarding claim 7, Noerpel teaches wherein downlink timeslots are allocated to terminals at random (col. 8, lines 56- col. 9, line 5).

Regarding claim 8, Noerpel teaches wherein uplink timeslots are allocated in order to avoid a transmission at one terminal being received by another terminal at a time for which the other terminal has been allocated a receive time slot (See Fig. 7)

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Regarding claim 9, the combination of above teaches wherein terminal receive time slots are allocated randomly; wherein allocation of terminal transmit time slots includes the steps of: calculating the minimum distance between a transmitting terminal and a receiving terminal which receives the transmission; repeating this calculation for all terminal transmit time slots; repeating the calculation for all terminals; calculating the resulting interference if each terminal used its worst terminal time slot; ranking the terminals according to which cause the worst interference with another terminal; and starting from the worst terminal, allocating the best time slot for that terminal, discarding terminal transmit time slots where transmit and receive time slots overlap in the same terminal (see above).

Conclusion

1. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Amanuel Lebassi, whose telephone number is (571) 270-5303. The Examiner can normally be reached on Monday-Thursday from 8:00am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Nick Corsaro can be reached at (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Amanuel Lebassi

/A. L./

03142009

/NICK CORSARO/

Supervisory Patent Examiner, Art Unit 2617